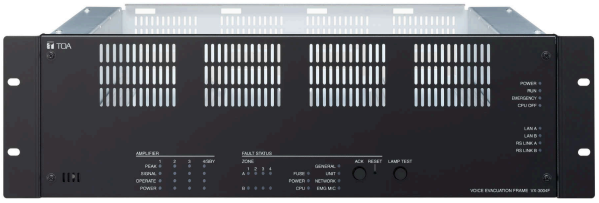
VX-3004F AMQ

VOICE ALARM SYSTEM FRAME



The VX-3004F AMQ is a device designed to control the voice evacuation announcements of TOA's VX-3000 Series rack-mount type voice evacuation system which is compliant with the European Standard EN54 for fire alarm systems. It has audio input terminals and can output the amplified audio signals to the speaker lines when the optional power amplifier modules are mounted.

It is possible to make an Emergency Warning Broadcast assigned a higher priority than the Emergency broadcast. Two patterns of the Emergency broadcast can be activated simultaneously. Compatible with network, the system can be configured in distributed arrangement.

Features include the following functions: Digital signal processing function that enables appropriate acoustic adjustment for individual input sound sources and output areas, Feedback suppressor function that automatically suppresses acoustic feedback when it occurs, VOX function that allows start/stop control of broadcast by way of an audio trigger, and ANC function that enables an ambient noise control. (The ANC function distinguishes between the unit's output sound and the ambient noise. The unit's output sound is not detected as noise.) Indicators that show such statuses as fault status and power amplifier signal status are provided. It has 4 speaker output channels, each of which is provided with A and B lines to enable duplication of the speaker lines. Up to 4 power amplifier modules can be mounted. The 4-channel amplifier can be used either for zone output or standby use. As the VX-3004F is equipped with Standby amplifier input/output terminal, the standby amplifier, when mounted, can be shared among VX-3000F units.

Key features

- Up to 4 amps (1 zone - 1 amp, 4 AB-zones or 3 AB zones + standby amp)
- All mandatory indications by EN54-16
- Status indication for each speaker line
- Fault acknowledge and lamp test button
- Input DSP: flexible filtertypes and compressor
- Output DSP: flexible filtertypes, compressor and delay up to 2.7 sec.

Specifications

Power Source	20 - 33 V DC, removable terminal block (4 pins)
Power Consumption	24 W (frame only) at 33V DC input, 90 W (RS Link: 2 A output) at 33 V DC input
LAN A, B	Number of Connectors: 2 (LAN A, LAN B) Network I/F: 100BASE-TX Network Protocol: TCP, UDP, ARP, ICMP, RTP, IGMP, FTP, HTTP, NTP Spanning tree Protocol: RSTP Audio Transmission System: TOA Packet Audio(*1) Audio Encoding Method: PCM Audio Sampling Frequency: 48 kHz Audio Quantifying Bit number: 16 bits Connection Device: VX-3004F, VX-3008F, VX-3016F, NX-300, and Switching HUB Connector: RJ45 connector Connection Cable: Category 5 twisted pair cable (CAT 5) or greater Number of Stages of Cascade connection: Up to 7 Maximum Cable Distance: 100m (328.08 ft)
RS Link A, B	Number of Connectors: 2 (RS LINK A, RS LINK B) Audio input level; 0 dB (*2) Power feed: Max. 1 A per connector Connector: RJ45 connector Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater Maximum cable distance: 1200 m (3937.01 ft)
DS Link	Connection Device: DS LINK of Power supply units Connector: RJ45 connector Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) Maximum Cable Distance: 5 m (16.4 ft)
Analog Link	Number of Connectors: 1 input, 1 output Connection Device: VX-3004F, VX-3008F, VX-3016F Connector: RJ45 connector Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater Maximum Cable Distance: 800 m (2624.67 ft)
Audio Input 1, 2, 3, 4	4 inputs Sensitivity Line: -20 dB(*2)/ MIC: -60 dB(*2) LINE/MIC/ANC sensor (changeable with setting software) Gain Control: volume adjustable with volume control (internal front panel) -∞ to 0 dB Input Impedance: 47kΩ electronically-balanced Frequency Response: 40 Hz - 20 kHz ±1 dB (at DA CONTROL LINK, 0 dB output) Distortion: 1% or less (at DA CONTROL LINK, 0 dB output, 1 kHz) Signal to Noise Ratio: 60 dB or more (at DA CONTROL LINK, A-weighted) Phantom Power Supply: 24 V DC, can be set with setting software Connector: Removable terminal block (6 pins): 2
Audio Input	16 inputs, no-voltage make contact input, open voltage: 24 V DC; short-circuit current: 2 mAFault Detection System: Short circuit, Open circuit; Method: Voltage detect; Connector: RJ45 connector
Control Input 1, 2	16 inputs , no-voltage make contact input, open voltage: 24 V DC, short-circuit current: 2 mA Fault Detection System: Short circuit, Open circuit, Method: Voltage detect Connector: RJ45 connector Connection Cable: Shielded Category 5 twisted pair cable (CAT5_STP) or greater
Emergency Control IN	Input 2: Isolated voltage input, -24 to +24 V Connector: RJ45 connector Connection Cable: Category 5 twisted pair cable (CAT5) or greater
VOX Function	Threshold: –60 to 0 dB (1 dB steps) Hysteresis: 0 to +10 dB; Hold time: 10 ms – 10 s Settable for each audio input

Control Output 1, 2	General outputs : 8 with CONTROL OUTPUT 1 Exclusive outputs : 3 with CONTROL OUTPUT 2; GENERAL FAULT, CPU FAULT, CPU OFF No-voltage make contact, electrical contact output, control current: 10 mA ; withstand voltage: 28 V DC Connector: RJ45 connector Connection cable: Shielded Category 5 twisted pair cable (CAT5-STP)- or greater
ATT/Control Output	8 outputs, no-voltage make contact, relay contact (NC, NO, C), control current: 2 mA to 5 A; withstand voltage: 125 V AC, 40 V DC Connector: Removable terminal block (12 pins) x 2
Digital Signal Processing	
Feedback Suppressor (FBS)	7 filters (auto) Settable for each audio input and RS LINK (A/B)
Equalizer/Filter	3 bands for each audio input and RS LINK (A/B), 6 bands for each amplifier output Parametric equalizer: 20 Hz - 20kHz, ±15 dB, Q 0.267 - 69.249 Filtering: High-pass filter 20- Hz - 20 kHz, 6 dB/oct, 12 dB/oct Low-pass filter 20- Hz - 20 kHz, 6 dB/oct, 12 dB/oct High shelving filter 6 - 20 kHz, ±15 dB Low shelving filter 20 - 500 kHz, ±15 dB Notch filter (amplifier output only) 20 Hz - 20 kHz, Q: 8.651 - 69.249 All-pass filter (amplifier output only) 20 Hz - 20 kHz, Q: 0.267 - 69.249 Horn equalizer (amplifier output only) 20 kHz, 0 to +18 dB (0.5 dB steps)
Compressor	Threshold: -20 to 0 dB (1 dB steps) Ratio: 1:1, 1.1:1, 1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 5:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1 Attack time: 0.2 ms - 5 s, Release time: 10 ms - 5 s Gain: -∞ to +10 dB, Knee type: hard knee, middle knee, soft knee
Delay	For each amplifier output, 0 - 2730 ms (0.021 ms steps)
ANC (Ambient Noise Control)	Amplifier output level control, Automatic sensor input reference level measuring, Sensor input reference level fine adjustment Maximum output signal level control: -15 to 0 dB Minimum output signal level control: -18 to -3 dB Sample time setting: 10 s, 20 s, 30 s, 1 min, 5 min Gain ratio setting: (Ambient noise: Output signal level) 6:3, 5:3, 4:3, 3:3, 3:4, 3:5, 3:6 Ambient noise measuring frequency setting: 20 Hz - 20 kHz, 3 points
Program Timer	Weekly program method; Daily program: 50 events, 10 types; Holiday program: 50 types
Time Adjustment	Control input, NTP
Speaker Line	4 channels (with AB LINE speaker out)1 Earth terminal Max. Voltage/Current: 100 VRMS, 5 ARMS Connector: Removable terminal block (17 pins) x 1; Fault detection system: Short circuit, Open circuit, Ground fault, Method: Impedance or End of line
Standby Amplifier Input/Output	Input: 1, Output: 1 Max. Voltage/Current: 100 VRMS, 5 ARMS Connector: Removable terminal block (2 pins) x 2
Module Slot	Number of modules: 4 DA CONTROL LINK: 4 DA OUTPUT LINK: 4 (Used only when a power amplifier module is installed)
Indicators	POWER (green): 1, RUN (green): 1, EMERGENCY (red): 1, CPU OFF (red): 1, LAN A (green): 1, LAN B (green): 1, RS LINK A (green):1, RS LINK B (green):1 FAULT STATUS (yellow) GENERAL: 1, UNIT: 1, NETWORK: 1, EMG MIC: 1, FUSE: 1, POWER: 1, CPU: 1, ZONE: 8 AMPLIFIER PEAK (red): 4, SIGNAL (green): 4, OPERATE (green): 4, POWER (green): 4

Operation	Fault control switch: 2 (ACK/RESET) Test Switch: 1 (LAMP TEST) Setting Switch: ID NUMBER, RESET, IMPEDANCE, Setting (internal front panel)
Operating Temperature	-5°C to 45°C (23°F to 113°F)
Operating Humidity	90%RH or less (no condensation)
Finish	Panel: Surface-treated steel plate, black, 30% gloss, paint
Dimensions	483 x 132.6 x 345 mm
Weight	7.6 kg
Included Accessories	Rack mounting screw: 4, Removable terminal plug (2 pins): 2 Removable terminal plug (4 pins): 1 , Removable terminal plug (6 pins): 2 ,Removable terminal plug (12 pins): 2 , Removable terminal plug (17 pins) :1 , CD (PC settinq software): 1 , Ferrite clamp: 2